

CLAIMS

What is claimed is:

- 5           1.    A furnace for heating a glass waveguide fiber preform to a temperature sufficient to draw a fiber therefrom comprising a graphite, generally tubular muffle including an inner surface having a coating of high purity silicon carbide on the inner surface of the muffle.
- 10           2.    The furnace of claim 1, wherein the muffle further comprises at least two generally tubular sections.
3.    The furnace of claim 2, wherein the muffle
- 15           comprises three generally tubular sections.
4.    The furnace of claim 1, wherein the coating has a thickness of at least about 2 mils.
- 20           5.    The furnace of claim 1, wherein the silicon carbide contains less than about 900 parts per billion of impurities.
- 25           6.    A method for producing a waveguide fiber in a draw furnace including a graphite, generally tubular muffle having an inner surface comprising the steps of:
- providing a high purity silicon carbide coating on the inner surface of the graphite muffle;
- disposing waveguide fiber preform in the muffle;
- 30           heating the furnace to a temperature sufficient to draw fiber from the preform; and
- drawing fiber from the preform.

7. The method of claim 6, wherein the temperature of furnace is at least about 1900°C.

5 8. The method of claim 6, wherein the temperature of the furnace is at least about 2000°C.

~~9. The method of claim 6, wherein the silicon carbide contains less than about 900 parts per billion of impurities.~~

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10. The method of claim 6, wherein the waveguide fiber drawn from the furnace has a point defect loss less than about 4%.

15 ~~11. The method of claim 1, wherein the waveguide fiber drawn from the furnace has a point defect loss less than about 1%.~~

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